



# THE SALT MARSH/MUDFLAT TRANSITION – ALL ABOUT STRESS

P. Willemsen, B.W. Borsje, T.J. Bouma, S.J.M.H. Hulscher  
University of Twente, NL; NIOZ and Utrecht University, NL; Deltares, NL



# INTRODUCTION



Conventional



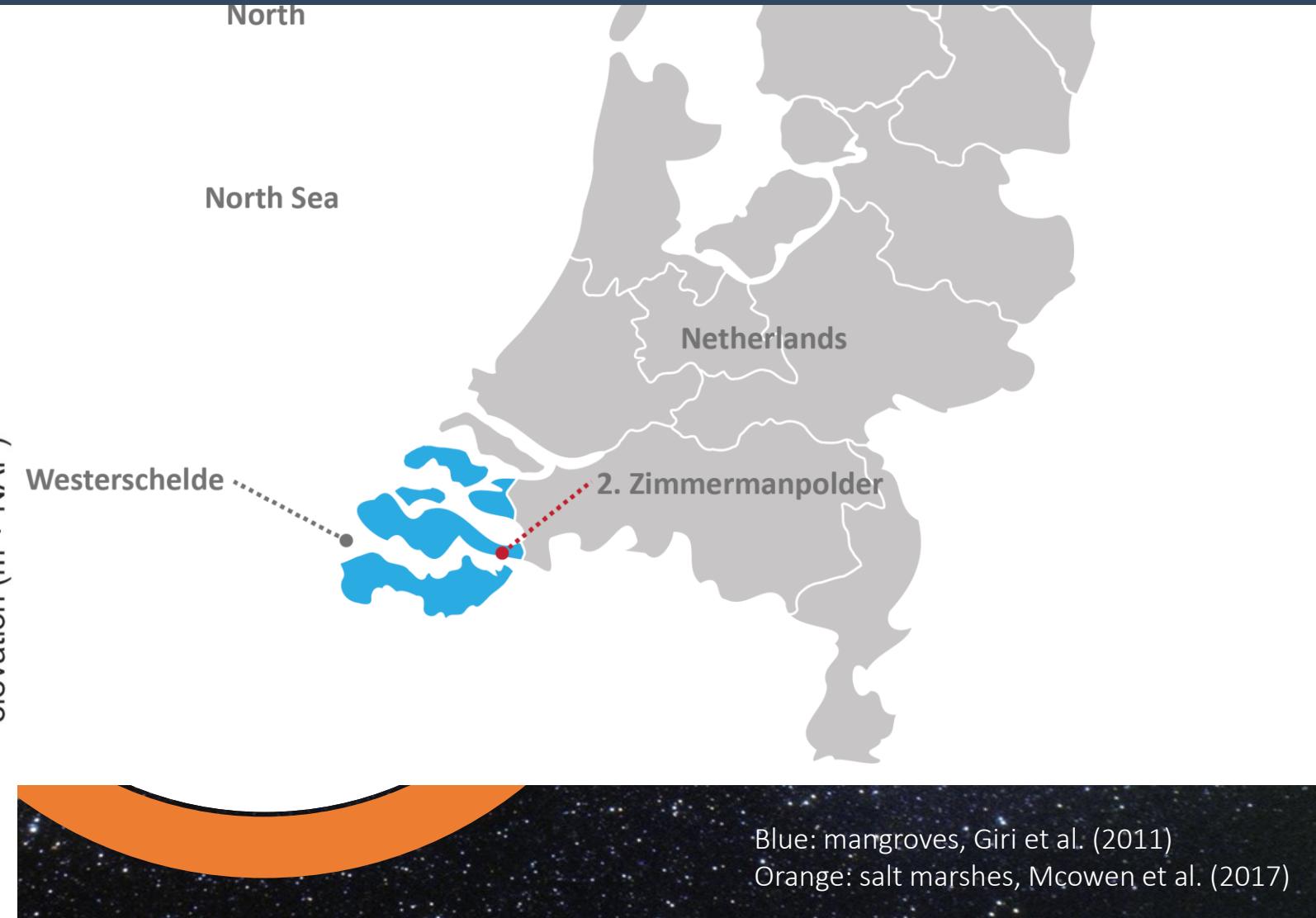
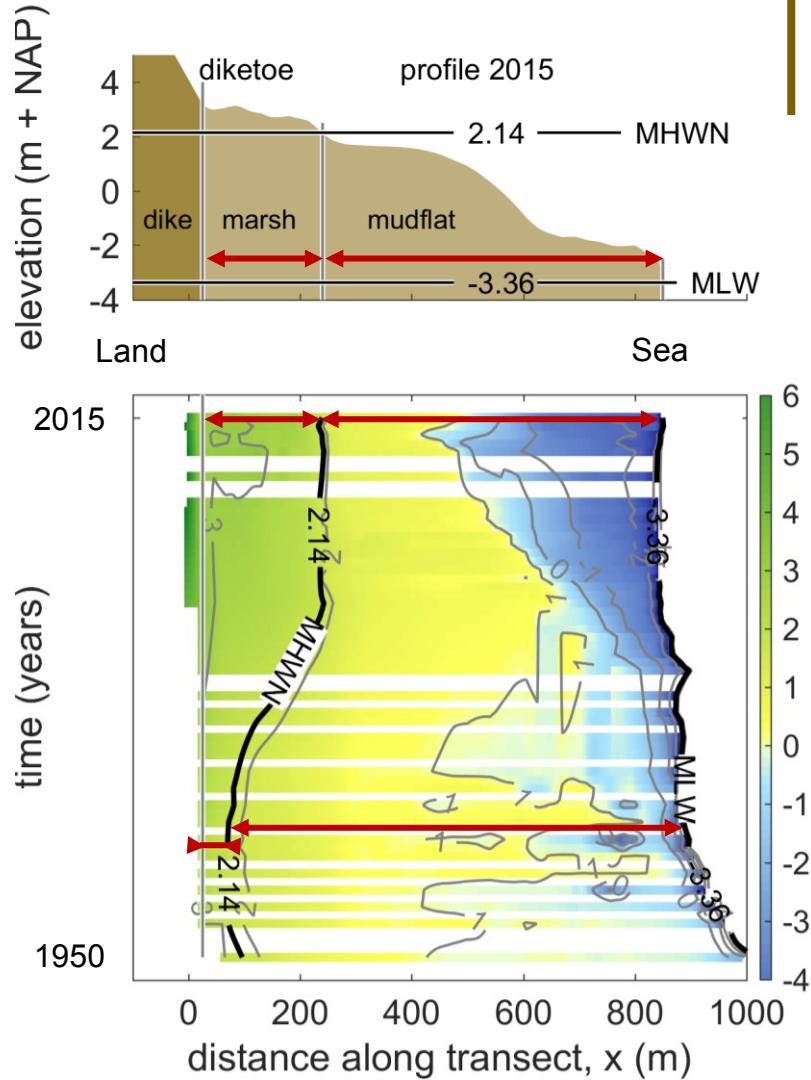
Climate Change

## THE SALT MARSH/MUDFLAT TRANSITION – ALL ABOUT STRESS

P. Willemsen, B.W. Borsje, T.J. Bouma, S.J.M.H. Hulscher  
University of Twente, NL; NIOZ and Utrecht University, NL; Deltares, NL



# INTRODUCTION





# INTRODUCTION



England

6. Tillingham

Thames  
estuary

Westerschelde

3. Paulina

1. Zuidgors

2. Zimmermanpolder

4. Hellegat



Wadden Sea

5. Uithuizen

Netherlands

North Sea

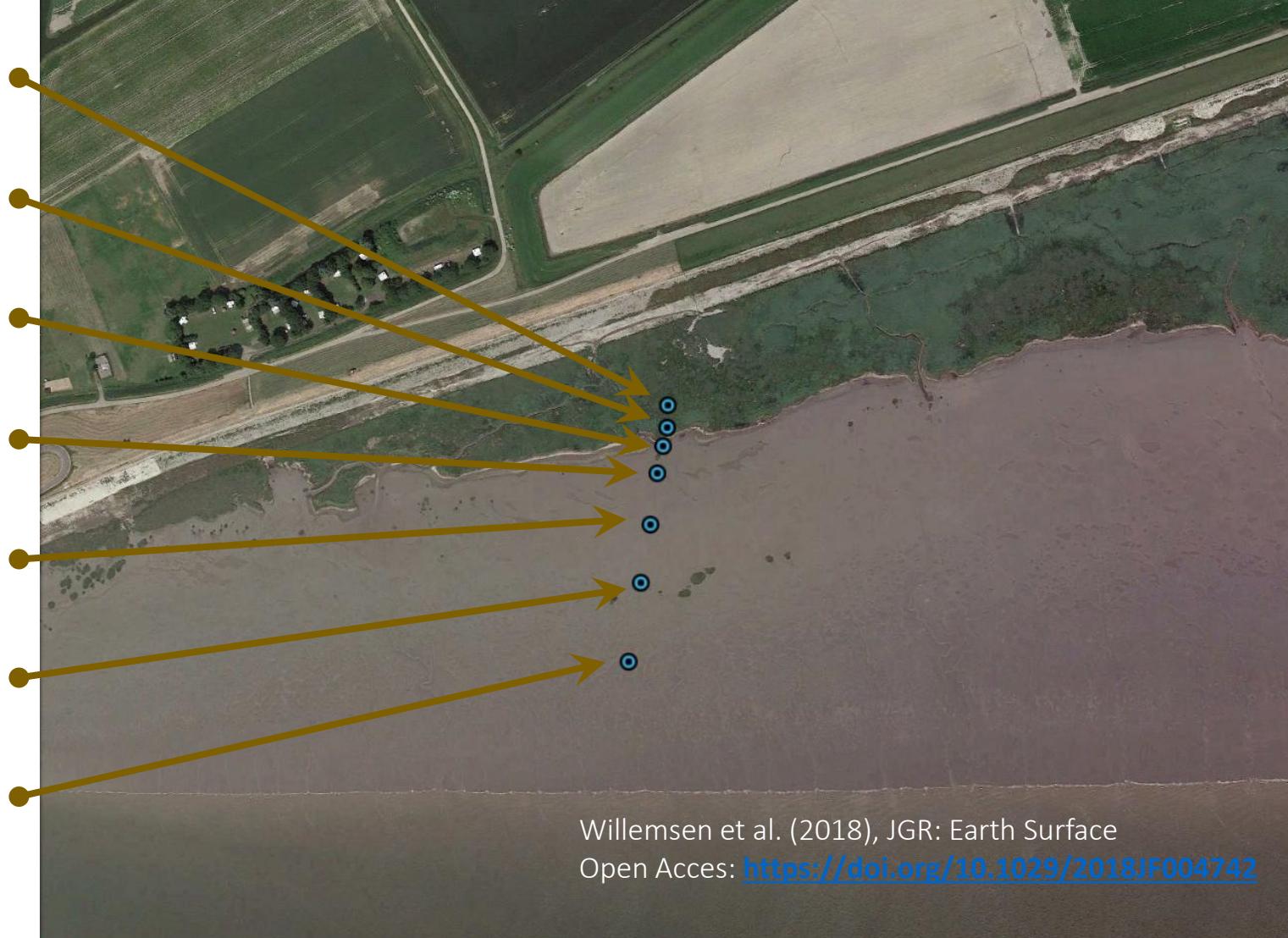
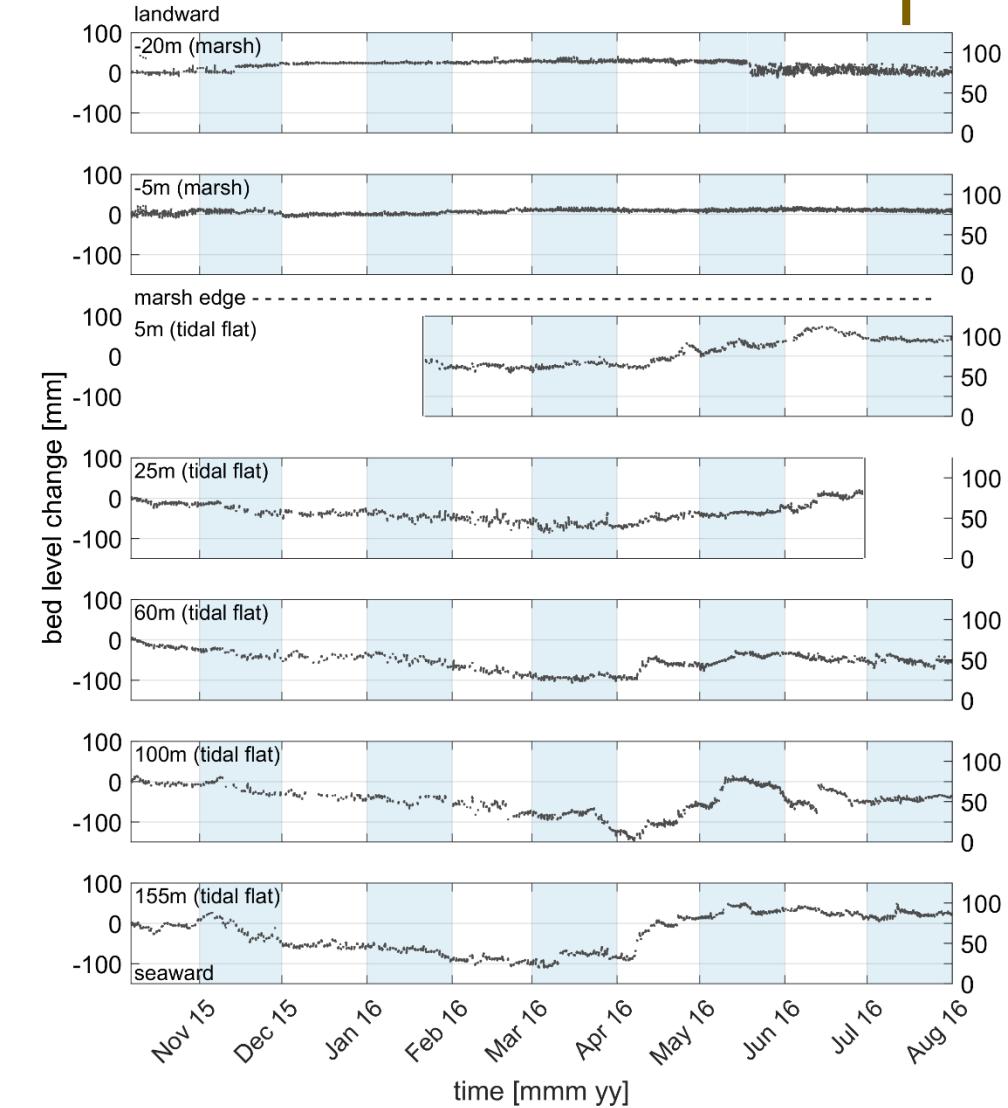


# AIM

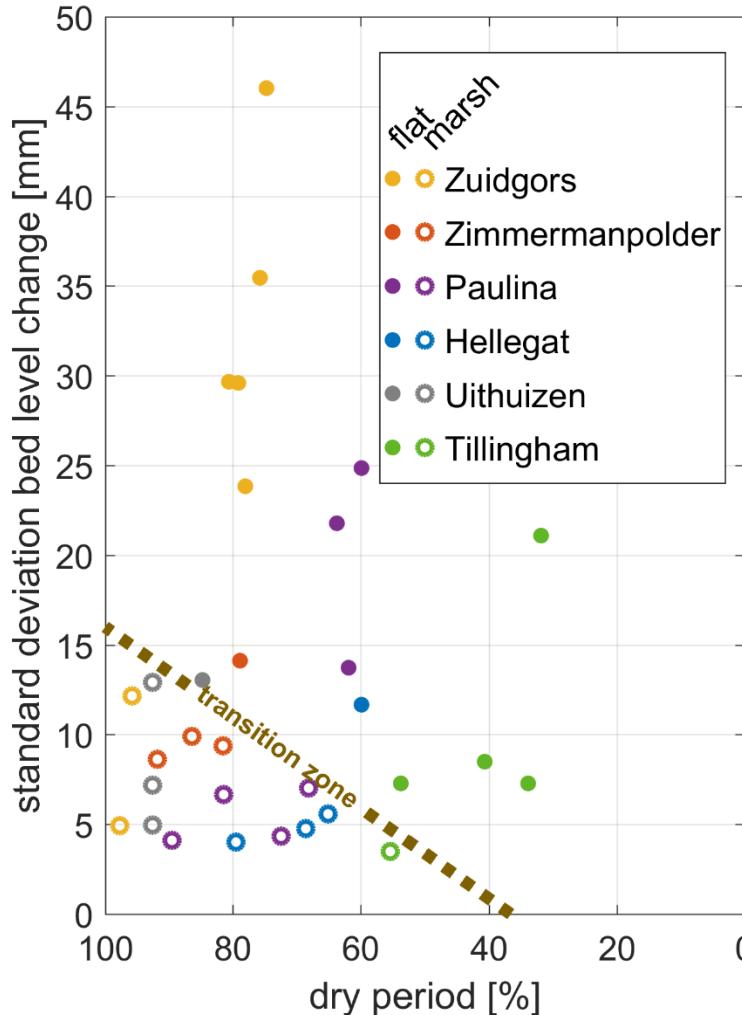
Obtain a better understanding of the factors constraining the lateral location of the marsh edge



# FIELD MEASUREMENTS



# THE MARSH EDGE



- Inundation: dry period [%]  
VS
- Bed level change: std of all measurements [mm]  
DRIVING
- Vegetation growth
  - if Bed level change ↑ ; then Inundation ↓; to let vegetation grow
  - if Inundation ↑ ; then Bed level change ↓; to let vegetation grow



p.willemsen@utwente.nl



# BED LEVEL DYNAMICS AT THE TRANSITION OF TIDAL FLAT AND SALT MARSH

P. Willemsen, B.W. Borsje, T.J. Bouma, S.J.M.H. Hulscher  
University of Twente, NL; NIOZ and Utrecht University, NL; Deltares, NL